

Detailed Action

Response to Arguments

1. Applicant's arguments filed on Dec. 30, 2009 with respect to claims 1 - 25 and 28 - 33 have been considered but are moot in view of the new ground(s) of rejection. Claims 26 and 27 are cancelled. See the below rejections for the relevant citations found in Zimmermann and Scholefield teaching the newly-added limitations.

Claim Rejections – 35 USC 103(a)

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 – 25 and 28 - 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmerman US Patent: US 6,785,252 B1 Aug. 31, 2004 and

in view of Scholefield US Patent: US 5,752,193 May 12, 1998.

Regarding claim 1, Zimmerman discloses,

an apparatus (self correcting bandwidth request/grant protocol in a broadband wireless communication system – ABSTRACT, Fig. 1/106, column 9, lines 1 – 13. The broadband wireless communication system 100 provides “bandwidth-on-demand” to the plurality of Customer Premises Equipment CPEs 110 – Fig. 1, column 2, lines 17 – 19, column 9, lines 27 – 29), comprising:

at least one processor and at least one memory including computer program code, the at least one memory and the computer program code configured to, with the at least one processor (the MAC executed by software in the base stations 106, in some embodiments, the software may execute on processors both in the base stations and the CPE - Fig. 1, column 8 line 66 through column 9, line 3),

cause the apparatus to at least to monitor (the base station 106 receives the bandwidth request and grants bandwidth requests reads on the claimed “monitor”, the base station monitors the appropriate bandwidth request contentions slots – ABSTRACT, Fig. 8/814, column 20, lines 13 – 34)

a predetermined parameter indicating a channel capacity in a received data stream of at least one of a plurality of channels (the bandwidth allocation algorithm to allocate bandwidth to the CPE that had requested bandwidth – Figs. 8/822, 11, 12, 13, column 20, lines 29 – 34, column 21, lines 26 – 51. The base station 106 receives the bandwidth request and grants bandwidth requests and the base station monitors the appropriate bandwidth request contentions slots. The base station 106 checks for the available bandwidth and performs the bandwidth allocation algorithm to allocate bandwidth to the CPE that had requested bandwidth. The amount of bandwidth dedicated to a given service is determined by the information rate and the quality of service required by that service and also taking into account bandwidth availability and other system parameters – Figs. 1, 8/804, column 2, lines 17 - 28. Here, the base station 106 keeps monitoring on the available bandwidth – ABSTRACT, Figs. 8/804, 8/814, 8/822, 11, 12, 13, column 20, lines 13 – 34, column 21, lines 26 – 51. In determining the amount of bandwidth to allocate a particular QoS for a particular CPE, the base station takes into account the QoS, modulation, and the fairness criteria used to keep an individual CPE from using up all available bandwidth – column 7, lines 44 – 56); and

determine a request for change of a maximum channel capacity allocated to said at least one of said plurality of channels (the base station MAC scheduler allocates the available bandwidth between the various services depending upon

the priorities and rules imposed by their quality of service – Fig. 11, column 21, lines 53 – 62. In determining the amount of bandwidth to allocate a particular QoS for a particular CPE, the base station takes into account the QoS, modulation, and the fairness criteria used to keep an individual CPE from using up all available bandwidth – column 7, lines 44 – 56),

but, is silent on, “when a value of said monitored predetermined parameter falls outside a predetermined allowed range”.

Scholefield teaches in detail, when a value of said monitored predetermined parameter falls outside a predetermined allowed range (the message communicates a minimum QOS grade/priority for incoming traffic, so as to prevent more than peak loading of the access and/or traffic channels – Figs. 7, 8, column 6, lines 31 – 49).

It would have been obvious to one of ordinary skill in the art, at the time of invention, to modify self-correcting bandwidth request/grant protocol of Zimmerman (Zimmerman, base station 106, Fig. 1/106), would have been incorporated an allocation/access request, the system infrastructure determines from the access request whether to allocate the subchannels to the subscriber unit of Scholefield (Scholefield, Fig. 1, column 2, lines 64 – 67), for an improved access procedure to accommodate multiple priority requests in an efficient

manner, that allows for quicker access times as the priority of the data traffic increases (Scholefield, ABSTRACT, column 3, lines 3 – 6).

Regarding claim 2, Zimmerman discloses,

an apparatus according to claim 1, wherein said maximum channel capacity corresponds to a maximum allowed data rate (the base station responds quickly to requests for more bandwidths for a constant bit rate service, the uplink bandwidth allocation to a constant bit rate service that is not currently operating at a MAXIMUM rate is made sufficiently large to accommodate the service's current rate and a bandwidth request – Fig. 4, column 15, lines 50 – 58. The TDM connections not already at maximum bandwidth are allocating enough extra bandwidth in the uplink to piggyback a request for additional bandwidth – column 22, lines 64 – 67, column 25, lines 6 – 23, reads on the claimed feature, wherein maximum channel capacity corresponding to a maximum allowed data rate).

Regarding claim 3, Zimmerman discloses,

an apparatus according to claim 2, wherein said maximum allowed data rate is set by a maximum transport format combination (the base station responds quickly to requests for more bandwidths for a constant bit rate service, the uplink bandwidth allocation to a constant bit rate service that is not currently operating

at a MAXIMUM rate is made sufficiently large to accommodate the service's current rate and a bandwidth request – Fig. 4, column 15, lines 50 – 58. The TDM connections not already at maximum bandwidth are allocating enough extra bandwidth in the uplink to piggyback a request for additional bandwidth – column 22, lines 64 – 67, column 25, lines 6 – 23. The base station 106 receives the bandwidth request and grants bandwidth requests, and the base station monitors the appropriate bandwidth request contentions slots – ABSTRACT, Fig. 8/814, column 20, lines 13 – 34, reads on the claimed feature, maximum transport format combination).

Regarding claim 4, Zimmerman discloses,

an apparatus according to claim 1, wherein said at least one memory and computer program code are further configured to, with the at least one processor, cause the apparatus at least to derive said value of said predetermined parameter by decoding a transport format combination indication information provided in said received data stream (the MAC executed by software in the base stations 106, in some embodiments, the software may execute on processors both in the base stations and the CPE - Fig. 1, column 8 line 66 through column 9, line 3. The base station 106 receives the bandwidth request and grants bandwidth requests, and the base station monitors the appropriate bandwidth request contentions slots – ABSTRACT, Fig. 8/814, column 20, lines

13 – 34, also, Figs. 3, 4, column 11, lines 6 – 58, reads on the claimed feature, decoding a transport format combination indication information received data stream).

Regarding claim 5, Zimmerman discloses,

an apparatus according to claim 1, wherein said at least one memory and computer program code are further configured to, with at least one processor, cause the apparatus at least to check available resources (the MAC executed by software in the base stations 106, in some embodiments, the software may execute on processors both in the base stations and the CPE - Fig. 1, column 8 line 66 through column 9, line 3. The base station MAC scheduler allocates the available bandwidth between the various services depending upon the priorities and rules imposed by their quality of service – Fig. 11, column 21, lines 53 – 62. In determining the amount of bandwidth to allocate a particular QoS for a particular CPE, the base station takes into account the QoS, modulation, and the fairness criteria used to keep an individual CPE from using up all available bandwidth – column 7, lines 44 – 56) and to reject said determined request in response to the checking results (variations in bandwidth requirements - i.e., increases or **decreases** to bandwidth requirements are necessary for all services transported by the system 100 with the exception of uncompressible constant bit rate, or continuous grant CG services – Fig. 6/614, column 13, lines 35 – 49,

column 16, lines 52 – 66, column 27, lines 2 – 23. If the sufficient bandwidth is available, the requested bandwidth is granted to the connection, else the base station waits for sufficient bandwidth to become available before granting the request – column 4, lines 2 – 5. If there is insufficient bandwidth available to the CPE 110 as determined by the base station's LL-MAA 506, **the bandwidth request will not be granted** – Fig. 5, column 16, lines 16 - 18).

Regarding claim 6, Zimmerman discloses,

an apparatus according to claim 1, wherein said at least one memory and computer program code are further configured to, with at least one processor, cause the apparatus at least to check available resources and to increase increase (the MAC executed by software in the base stations 106, in some embodiments, the software may execute on processors both in the base stations and the CPE - Fig. 1, column 8 line 66 through column 9, line 3, Variations in bandwidth requirements - i.e., **increases** or decreases to bandwidth requirements are necessary for all services transported by the system 100 with the exception of uncompressible constant bit rate, or continuous grant CG services – Fig. 6/614, column 13, lines 35 – 49, column 16, lines 52 – 66, column 27, lines 2 - 23) said maximum channel capacity to a value smaller than said value of said monitored predetermined parameter in response to the checking result, when said request has been determined (the bandwidth allocation

synchronization between CPEs and base stations is performed by periodically transmitting aggregate bandwidth request. The self-correcting bandwidth request/grant protocol has four-one incremental bandwidth request-aggregate bandwidth request pattern. Here, to increase maximum channel capacity to a value smaller than or equal to monitored parameter is the design and/or engineering and/or capacity choice – column 31, lines 1 – 37).

Regarding claim 7, Zimmerman discloses,

an apparatus according to claim 1, wherein said at least one memory and computer program code are further configured to, with at least one processor, cause the apparatus at least to check the available resources and to increase (the MAC executed by software in the base stations 106, in some embodiments, the software may execute on processors both in the base stations and the CPE - Fig. 1, column 8 line 66 through column 9, line 3. Variations in bandwidth requirements - i.e., **increases** or decreases to bandwidth requirements are necessary for all services transported by the system 100 with the exception of uncompressible constant bit rate, or continuous grant CG services – Fig. 6/614, column 13, lines 35 – 49, column 16, lines 52 – 66, column 27, lines 2 - 23) said maximum channel capacity to said value of said monitored predetermined parameter in response to the checking result, when said request has been determined (the bandwidth allocation synchronization between CPEs and base

stations is performed by periodically transmitting aggregate bandwidth request. The self-correcting bandwidth request/grant protocol has four-one incremental bandwidth request-aggregate bandwidth request pattern. Here, to increase maximum channel capacity to a value smaller than or equal to monitored parameter is the design and/or engineering and/or capacity choice – column 31, lines 1 – 37).

Regarding claim 8, Zimmerman discloses,

an apparatus according to claim 5, wherein said at least one memory and computer program code are further configured to, with at least one processor, cause the apparatus at least to repeat said checking at a predetermined timing (the MAC executed by software in the base stations 106, in some embodiments, the software may execute on processors both in the base stations and the CPE - Fig. 1, column 8 line 66 through column 9, line 3. Upon receipt of aggregate requests, the base stations reset their records to correctly reflect the current bandwidth requirements of associated CPES. Periodic use provides a self-correcting bandwidth allocation protocol yet without the bandwidth overhead associated with the protocols. Here, the base station receives the bandwidth request at predetermined time period, reads on the claimed feature, monitoring for a predetermined time period and determines the number of transmission time intervals, as the base station monitors the appropriate bandwidth request

contentions slots at those predetermined time period – ABSTRACT, Figs. 1, 13, column 26, lines 46 – 65, column 31, lines 1 - 17).

Regarding claim 9, Zimmerman discloses,

a device according claim 1, wherein said plurality of channels are dedicated uplink channels of a radio access network (the bandwidth requests can be piggybacked on uplink bandwidth already allotted and currently being used by a data service – Fig. 1, 4 column 7, lines 7 – 17, column 11, lines 42 - 58).

Regarding claim 10, Zimmerman discloses,

an apparatus according to claim 1, wherein said apparatus comprises is a base station (the base station MAC scheduler – Figs. 1/106, 11, and column 21, line 57).

Regarding claim 11, Zimmerman discloses,

an apparatus (self correcting bandwidth request/grant protocol in a broadband wireless communication system – ABSTRACT, Fig. 1/106, column 9, lines 1 – 13. The broadband wireless communication system 100 provides “bandwidth-on-demand” to the plurality of Customer Premises Equipment CPEs 110 – Fig. 1,

column 2, lines 17 – 19, column 9, lines 27 – 29, comprising:

at least one processor and at least one memory including computer program code, the at least one memory and the computer program code configured to, with at least one processor (the MAC executed by software in the base stations 106, in some embodiments, the software may execute on processors both in the base stations and the CPE - Fig. 1, column 8 line 66 through column 9, line 3),

cause the apparatus at least to set a predetermined parameter indicating a channel capacity to a value outside a predetermined allowed range (the base station 106 receives the bandwidth request and grants bandwidth requests and the base station monitors the appropriate bandwidth request contentions slots. The base station 106 checks for the available bandwidth and performs the bandwidth allocation algorithm to allocate bandwidth to the CPE that had requested bandwidth. The amount of bandwidth dedicated to a given service is determined by the information rate and the quality of service required by that service and also taking into account bandwidth availability and other system parameters – Figs. 1, 8/804, column 2, lines 17 - 28. Here, the base station 106 keeps monitoring on the available bandwidth – ABSTRACT, Figs. 8/804, 8/814, 8/822, 11, 12, 13, column 20, lines 13 – 34, column 21, lines 26 – 51. In determining the amount of bandwidth to allocate a particular QoS for a particular CPE, the base station takes into account the QoS, modulation, and the fairness

criteria used to keep an individual CPE from using up all available bandwidth – column 7, lines 44 – 56),

but, is silent on, “to request a change of a maximum channel capacity”.

Scholefield teaches in detail, to request a change of the maximum channel capacity (the message communicates a minimum QOS grade/priority for incoming traffic, so as to prevent more than peak loading of the access and/or traffic channels – Figs. 7, 8, column 6, lines 31 – 49).

It would have been obvious to one of ordinary skill in the art, at the time of invention, to modify self-correcting bandwidth request/grant protocol of Zimmerman (Zimmerman, base station 106, Fig. 1/106), would have been incorporated an allocation/access request, the system infrastructure determines from the access request whether to allocate the subchannels to the subscriber unit of Scholefield (Scholefield, Fig. 1, column 2, lines 64 – 67), for an improved access procedure to accommodate multiple priority requests in an efficient manner, that allows for quicker access times as the priority of the data traffic increases (Scholefield, ABSTRACT, column 3, lines 3 – 6).

Regarding claim 12, Zimmerman discloses,

an apparatus according to claim 11, wherein said value is selected from a predetermined temporary range comprising values higher than said allowed range (self correcting bandwidth request/grant protocol in a broadband wireless communication system – ABSTRACT, Fig. 1/106, column 9, lines 1 – 13. The broadband wireless communication system 100 provides “bandwidth-on-demand” to the plurality of Customer Premises Equipment CPEs 110 – Fig. 1, column 2, lines 17 – 19, column 9, lines 27 – 29. The bandwidth allocation synchronization between CPEs and base stations is performed by periodically transmitting aggregate bandwidth request. The self-correcting bandwidth request/grant protocol has four-one incremental bandwidth request-aggregate bandwidth request pattern. Here, requesting higher than allowed value or to request the maximum available capacity is the design and/or engineering and/or capacity choice – column 31, lines 1 – 37).

Regarding claim 13, Zimmerman discloses,

an apparatus according to claim 12, wherein the use of said; value of said temporary range is restricted to a predetermined time period (the base station MAC scheduler allocates the available bandwidth between the various services depending upon the priorities and rules imposed by their quality of service – Fig. 11, column 21, lines 53 – 62. In determining the amount of bandwidth to allocate a particular QoS for a particular CPE, the base station takes into account the

QoS, modulation, and the fairness criteria used to keep an individual CPE from using up all available bandwidth – column 7, lines 44 – 56. The base station 106 receives the bandwidth request and grants bandwidth requests, and the base station monitors the appropriate bandwidth request contentions slots. Here, it is understood that due to system capacity and engineering design choice, that the value of range is restricted to a predetermined time period, so after the time expires, the system can reallocate the resources to other users – ABSTRACT, Fig. 8/814, column 20, lines 13 – 34).

Regarding claim 14, it is similar to claim 8 above, and is rejected on the same grounds.

Regarding claim 15, it is similar to claim 2 above, and is rejected on the same grounds.

Regarding claim 16, it is similar to claim 3 above, and is rejected on the same grounds.

Regarding claim 17, Zimmerman discloses,

an apparatus according to claims 11, wherein, said apparatus comprises is a cellular terminal (the base station 106 receives the bandwidth request and grants

bandwidth requests and the base station monitors the appropriate bandwidth request contentions slots. The base station 106 checks for the available bandwidth and performs the bandwidth allocation algorithm to allocate bandwidth to the CPE that had requested bandwidth. The amount of bandwidth dedicated to a given service is determined by the information rate and the quality of service required by that service and also taking into account bandwidth availability and other system parameters. Here, the CPE reads on the claimed cellular terminal – Figs. 1, 8/804, column 2, lines 17 - 28).

Regarding claim 18, Zimmerman discloses,

a method (self correcting bandwidth request/grant protocol in a broadband wireless communication system – ABSTRACT, Fig. 1/106, column 9, lines 1 – 13. The broadband wireless communication system 100 provides “bandwidth-on-demand” to the plurality of Customer Premises Equipment CPEs 110 – Fig. 1, column 2, lines 17 – 19, column 9, lines 27 - 29), comprising:

monitoring a predetermined parameter indicating a channel capacity in a received data stream of at least one of a plurality of channels (the base station 106 receives the bandwidth request and grants bandwidth requests reads on the claimed “monitoring unit”, the base station monitors the appropriate bandwidth request contentions slots – ABSTRACT, Fig. 8/814, column 20, lines 13 – 34.

The bandwidth allocation algorithm to allocate bandwidth to the CPE that had requested bandwidth – Figs. 8/822, 11, 12, 13, column 20, lines 29 – 34, column 21, lines 26 – 51. The base station 106 receives the bandwidth request and grants bandwidth requests and the base station monitors the appropriate bandwidth request contentions slots. The base station 106 checks for the available bandwidth and performs the bandwidth allocation algorithm to allocate bandwidth to the CPE that had requested bandwidth. The amount of bandwidth dedicated to a given service is determined by the information rate and the quality of service required by that service and also taking into account bandwidth availability and other system parameters – Figs. 1, 8/804, column 2, lines 17 - 28. Here, the base station 106 keeps monitoring on the available bandwidth – ABSTRACT, Figs. 8/804, 8/814, 8/822, 11, 12, 13, column 20, lines 13 – 34, column 21, lines 26 – 51. In determining the amount of bandwidth to allocate a particular QoS for a particular CPE, the base station takes into account the QoS, modulation, and the fairness criteria used to keep an individual CPE from using up all available bandwidth – column 7, lines 44 – 56; and

determining a request for change of a maximum channel capacity allocated to said at least one of said plurality of channels (the base station MAC scheduler – Figs. 1/106, 11, column 21, line 57. The base station MAC scheduler allocates the available bandwidth between the various services depending upon the priorities and rules imposed by their quality of service – Fig. 11, column 21, lines

53 – 62. In determining the amount of bandwidth to allocate a particular QoS for a particular CPE, the base station takes into account the QoS, modulation, and the fairness criteria used to keep an individual CPE from using up all available bandwidth – column 7, lines 44 – 56),

but, is silent on, “when a value of said monitored predetermined parameter falls outside a predetermined allowed range”.

Scholefield teaches in detail, when a value of said monitored predetermined parameter falls outside a predetermined allowed range (the message communicates a minimum QOS grade/priority for incoming traffic, so as to prevent more than peak loading of the access and/or traffic channels – Figs. 7, 8, column 6, lines 31 – 49).

It would have been obvious to one of ordinary skill in the art, at the time of invention, to modify self-correcting bandwidth request/grant protocol of Zimmerman (Zimmerman, base station 106, Fig. 1/106), would have been incorporated an allocation/access request, the system infrastructure determines from the access request whether to allocate the subchannels to the subscriber unit of Scholefield (Scholefield, Fig. 1, column 2, lines 64 – 67), for an improved access procedure to accommodate multiple priority requests in an efficient manner, that allows for quicker access times as the priority of the data traffic

increases (Scholefield, ABSTRACT, column 3, lines 3 – 6).

Regarding claim 19, it is similar to claim 2 above, and is rejected on the same grounds.

Regarding claim 20, it is similar to claim 3 above, and is rejected on the same grounds.

Regarding claim 21, it is similar to claim 4 above, and is rejected on the same grounds.

Regarding claim 22, it is similar to claim 5 above, and is rejected on the same grounds.

Regarding claim 23, it is similar to claim 6 above, and is rejected on the same grounds.

Regarding claim 24, it is similar to claim 7 above, and is rejected on the same grounds.

Regarding claim 25, it is similar to claim 8 above, and is rejected on the same grounds.

Regarding claim 28, Zimmerman discloses,

a method (self correcting bandwidth request/grant protocol in a broadband wireless communication system – ABSTRACT, Fig. 1/106, column 9, lines 1 – 13. The broadband wireless communication system 100 provides "bandwidth-on-demand" to the plurality of Customer Premises Equipment CPEs 110 – Fig. 1, column 2, lines 17 – 19, column 9, lines 27 – 29), comprising:

setting a predetermined parameter indicating a channel capacity to a value outside a predetermined allowed range (the base station 106 receives the bandwidth request and grants bandwidth requests and the base station monitors the appropriate bandwidth request contentions slots. The base station 106 checks for the available bandwidth and performs the bandwidth allocation algorithm to allocate bandwidth to the CPE that had requested bandwidth. The amount of bandwidth dedicated to a given service is determined by the information rate and the quality of service required by that service and also taking into account bandwidth availability and other system parameters – Figs. 1, 8/804, column 2, lines 17 - 28. Here, the base station 106 keeps monitoring on the available bandwidth – ABSTRACT, Figs. 8/804, 8/814, 8/822, 11, 12, 13, column 20, lines 13 – 34, column 21, lines 26 – 51. In determining the amount of bandwidth to allocate a particular QoS for a particular CPE, the base station takes into account the QoS, modulation, and the fairness criteria used to keep an

individual CPE from using up all available bandwidth – column 7, lines 44 – 56),

but, is silent on, “to request a change of a maximum channel capacity”.

Scholefield teaches in detail, to request a change of the maximum channel capacity (the message communicates a minimum QOS grade/priority for incoming traffic, so as to prevent more than peak loading of the access and/or traffic channels – Figs. 7, 8, column 6, lines 31 – 49).

It would have been obvious to one of ordinary skill in the art, at the time of invention, to modify self-correcting bandwidth request/grant protocol of Zimmerman (Zimmerman, base station 106, Fig. 1/106), would have been incorporated an allocation/access request, the system infrastructure determines from the access request whether to allocate the subchannels to the subscriber unit of Scholefield (Scholefield, Fig. 1, column 2, lines 64 – 67), for an improved access procedure to accommodate multiple priority requests in an efficient manner, that allows for quicker access times as the priority of the data traffic increases (Scholefield, ABSTRACT, column 3, lines 3 – 6).

Regarding claim 29, it is similar to claim 12 above, and is rejected on the same grounds.

Regarding claim 30, it is similar to claim 13 above, and is rejected on the same grounds.

Regarding claim 31, it is similar to claim 8 above, and is rejected on the same grounds.

Regarding claim 32, it is similar to claim 2 above, and is rejected on the same grounds.

Regarding claim 33, it is similar to claim 3 above, and is rejected on the same grounds.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication from the examiner should be directed to Nimesh Patel at (571) 270-1228, normally reached on Mon-Thur. 6:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael, Perez-Gutierrez, can be reached at (571) 272-7915.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nimesh Patel/

/Rafael Pérez-Gutiérrez/

Supervisory Patent Examiner, Art Unit 2617